EXHIBIT E

Report of Dr. John Lynch in Rebuttal to the Report of Dr. Risch Expert

Date: January 14, 2025

Signature: 

John B. Lynch, MD, MPH, FIDSA

I have been engaged as an expert in this matter. I provided a report with my experience, education background, publications, and testimony experience. This report is provided as a rebuttal to the report of Dr. Harvey Risch in addition to that expert report. Based on my decades of work in clinical infectious diseases, epidemiology, and research in viral immunology and vaccinology, I take exception to many of the points raised.

Comments on Section "Professional Training and Experience" (pages 1-2)

In the first paragraph of the report's second page, Dr. Risch wrote that "In May 2020, I published the seminal review paper on early treatment of high-risk Covid-19 outpatients in the *American Journal of Epidemiology…"*. This is a misattribution of expertise. This paper recommended that a combination of hydroxychloroquine and azithromycin should be used aggressively for outpatients with COVID-19.[1] There were and are not data to support this finding and this paper did not support later research (i.e. it was not "seminal"). Subsequent letters to editor of the journal highlight similar concerns about this article as well.[2] As a highly experienced

[1] *See* Risch HA, Early Outpatient Treatment of Symptomatic, High-Risk COVID-19 Patients That Should Be Ramped Up Immediately as Key to the Pandemic Crisis, American Journal of Epidemiology, Volume 189, Issue 11, November 2020, Pages 1218–1226, https://doi.org/10.1093/aje/kwaa093

[2] *See* Korman TM. RE: "EARLY OUTPATIENT TREATMENT OF SYMPTOMATIC, HIGH-RISK COVID-19 PATIENTS THAT SHOULD BE RAMPED UP IMMEDIATELY AS KEY TO THE PANDEMIC CRISIS". Am J Epidemiol. 2020 Nov 2;189(11):1442-1443. doi: 10.1093/aje/kwaa154. PMID: 32685980; PMCID: PMC7454271; Peiffer-Smadja N, Costagliola D. RE: "EARLY OUTPATIENT TREATMENT OF SYMPTOMATIC, HIGH-RISK COVID-19 PATIENTS THAT SHOULD BE RAMPED UP IMMEDIATELY AS KEY TO THE PANDEMIC CRISIS". Am J Epidemiol. 2020 Nov 2;189(11):1443-1444. doi: 10.1093/aje/kwaa151. PMID: 32685975; PMCID: PMC7454270.

infectious diseases physician, this paper is not referenced in any COVID treatment decision making or guidance by a recognized national body, such as the National Institutes of Health or the Infectious Diseases Society of America. Notably, Dr. Risch has co-authored a paper with Dr. Peter McCullough on COVID-19 and vaccinations based on autopsy findings that was retracted due to concerns about bias, concerns about data, concerns about results, concerns about references, errors in methods, errors in results and/or conclusions, and unreliable results.[3] Dr. Risch cites two additional papers that he co-authored with Dr. McCullough (only one of the two citation hyperlinks work and there is no title for either paper). Dr. McCullough has had multiple COVID papers retracted and has proven to be an unreliable COVID investigator.

As an infectious diseases specialist, an epidemiologist, and an expert in the COVID-19 response, including being a co-author on the New England Journal of Medicine's first review on mild or moderate COVID-19, I have never cited or used Dr. McCullough's and Dr. Risch's so-called "now-standard understanding of early outpatient treatment".[4] I regard much of Dr. Risch's publications in this area as misinformation.[5]

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[3] *See* http://retractiondatabase.org/RetractionSearch.aspx#?auth%3dHarvey%2bA%2bRisch
[4] *See* Gandhi RT, Lynch JB, Del Rio C. Mild or Moderate Covid-19. N Engl J Med. 2020 Oct 29;383(18):1757-1766. doi: 10.1056/NEJMcp2009249. Epub 2020 Apr 24. PMID: 32329974.
[5] *See* Hulscher N, Alexander PE, Amerling R, Gessling H, Hodkinson R, Makis W, **Risch HA**, Trozzi M, McCullough PA. **Withdrawn**: A systematic review of autopsy findings in deaths after COVID-19 vaccination. Forensic Sci Int. 2024 Jun 21:112115. doi: 10.1016/j.forsciint.2024.112115. Epub ahead of print. PMID: 39120477; McCullough PA, Stricker RB, **Risch HA**. Role of hydroxychloroquine in multidrug treatment of COVID-19. Rev Cardiovasc Med. 2021 Sep 24;22(3):545-546. doi: 10.31083/j.rcm2203063. PMID: 34565055; Alexander PE, Armstrong R, Fareed G, Lotus J, Oskoui R, Prodromos C, **Risch HA**, Tenenbaum

Comments on Section "Background: Public Health Management of the Covid-19 Pandemic" (page 2)

Under the next section heading, "Background: Public Health Management of the Covid-19 Pandemic" in the first paragraph, Dr. Risch wrote that experts should not have relied on case counts of COVID-19. His reasoning is incoherent from public health or epidemiological perspectives. Case counts are strongly associated with individual level harm from infection, impact on the workforce, impact on school attendance, and other outcomes like long COVID. It was also clearly demonstrated throughout the pandemic that case counts started to rise 2-4 weeks prior to increases in COVID-19 hospitalization and later deaths. Dr. Risch even wrote that "apparent

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HC, Wax CM, Dara P, McCullough PA, Gill KK. Early multidrug treatment of SARS-CoV-2 infection (COVID-19) and reduced mortality among nursing home (or outpatient/ambulatory) residents. Med Hypotheses. 2021 Aug;153:110622. doi: 10.1016/j.mehy.2021.110622. Epub 2021 Jun 5. PMID: 34130113; PMCID: PMC8178530; McCullough PA, Alexander PE, Armstrong R, Arvinte C, Bain AF, Bartlett RP, Berkowitz RL, Berry AC, Borody TJ, Brewer JH, Brufsky AM, Clarke T, Derwand R, Eck A, Eck J, Eisner RA, Fareed GC, Farella A, Fonseca SNS, Geyer CE Jr, Gonnering RS, Graves KE, Gross KBV, Hazan S, Held KS, Hight HT, Immanuel S, Jacobs MM, Ladapo JA, Lee LH, Littell J, Lozano I, Mangat HS, Marble B, McKinnon JE, Merritt LD, Orient JM, Oskoui R, Pompan DC, Procter BC, Prodromos C, Rajter JC, Rajter JJ, Ram CVS, Rios SS, **Risch HA**, Robb MJA, Rutherford M, Scholz M, Singleton MM, Tumlin JA, Tyson BM, Urso RG, Victory K, Vliet EL, Wax CM, Wolkoff AG, Wooll V, Zelenko V. Multifaceted highly targeted sequential multidrug treatment of early ambulatory high-risk SARS-CoV-2 infection (COVID-19). Rev Cardiovasc Med. 2020 Dec 30;21(4):517-530. doi: 10.31083/j.rcm.2020.04.264. PMID: 33387997; Szente Fonseca SN, de Queiroz Sousa A, Wolkoff AG, Moreira MS, Pinto BC, Valente Takeda CF, Rebouças E, Vasconcellos Abdon AP, Nascimento ALA, **Risch HA**. Risk of hospitalization for Covid-19 outpatients treated with various drug regimens in Brazil: Comparative analysis. Travel Med Infect Dis. 2020 Nov-Dec;38:101906. doi: 10.1016/j.tmaid.2020.101906. Epub 2020 Oct 31. PMID: 33137493; PMCID: PMC7604153; McCullough PA, Kelly RJ, Ruocco G, Lerma E, Tumlin J, Wheelan KR, Katz N, Lepor NE, Vijay K, Carter H, Singh B, McCullough SP, Bhambi BK, Palazzuoli A, De Ferrari GM, Milligan GP, Safder T, Tecson KM, Wang DD, McKinnon JE, O'Neill WW, Zervos M, **Risch HA**. Pathophysiological Basis and Rationale for Early Outpatient Treatment of SARS-CoV-2 (COVID-19) Infection. Am J Med. 2021 Jan;134(1):16-22. doi: 10.1016/j.amjmed.2020.07.003. Epub 2020 Aug 7. PMID: 32771461; PMCID: PMC7410805.

case occurrence correlates with these severe outcomes…". He also cites a single estimated infection mortality rate (IFR) averaged across the age span that I find objectionable for two reasons. First, this grossly underestimates the mortality rate in sub-populations like older adults and people with serious co-morbidities. The IFR is an estimate using the total number of attributable deaths divided by the total number of infected cases (both known and modeled). Even if an estimated IFR is considered "low", it should be recognized that a low rate in a very large population remains a very large number. Lower IFRs are commonly used inappropriately by purveyors of misinformation to make the COVID-19 pandemic appear less dangerous than it truly was, regardless of the immense amount of suffering and death that occurred. As a result, scientists may argue about infection fatality rates but the actual number of deaths (over 1.2 million in the U.S. alone), patients with severe disease requiring hospitalization, and missed days of work, school, and other life events matters far more. This is reflected on by the author of the article that he cites (an opinion, not research, article), "The main lesson to be learnt here is not to quibble about the true value of the IFR but, instead, to construct a strategy that is robust to these uncertainties."[6] Finally, the last sentence of that paragraph somehow equates getting infected with a "public good". As a physician and epidemiologist, this is contrary to everything I understand to be the role of these two areas of training.

In the following paragraph, Dr. Risch cites data stating that by 2023 more than 87% of Americans had been infected. This statement is misleading. First, he neglects to mention that, in that data, at the beginning of 2022, a time that is not relevant to the

[6] *See* https://unherd.com/newsroom/how-wrong-was-i-on-covid-ifr/

implementation of the Proclamation, less than half of Americans who donated blood (arguably not a representative group of all people in the U.S.) had been infected (the citation link does not work). At the time of the Proclamation, the trajectory of the pandemic was unknown. In the summer and fall of 2021, there was serious concern that we could see a more infectious and more virulent variant compared to the delta variant that we were already responding to. Using data that was not available to the Governor or anyone else, due to it being in the future, is not appropriate. I note that many of Dr. Risch's citations are to data and papers published after—sometimes years after—the decision at issue was made regarding Plaintiffs and their employment with the Washington Department of Fish and Wildlife. By way of just a few examples, Karimizadeh et al. cited at page 3, is from 2023; COVID-19 Forecasting Team cited at page 4 is also from 2023; León et al. cited at page 4 is from 2022. Without identifying each article long past the case period here, data reviewed in hindsight does not necessarily give an appropriate view or analysis of the data in place during the case period here (September and October of 2021).

Moreover, many of the citations to articles are incomplete and those articles and data contain information that undermines Dr. Risch's opinions on the lack of positive effects of the vaccine. For example, where he cites León et al., 2022, at page 4, to support the lack of benefit of vaccination, he omits that the conclusion of the authors was that "Initial infection among unvaccinated persons increases risk for serious illness, hospitalization, long-term sequelae, and death; by November 30, 2021, approximately 130,781 residents of California and New York had died from COVID-

19. Thus, vaccination remains the safest and primary strategy to prevent SARS-CoV-2 infections, associated complications, and onward transmission."

Comments on Section "Post-infection Natural Immunity vs Vaccine Immunity Against Covid-19" (pages 3-5)

In this section, Dr. Risch states that officials should have used post-infection mediated immunity as a proxy for vaccination. As outlined in my expert report, this does not work. Like all COVID-19 immunity, immunity after infection, assuming the person doesn't die, wanes. There is no test or other tool that indicates time from infection or required level of antibody or T-cell mediated activity after infection. He then moves on to some sort of estimate of herd immunity using the epidemiological basic reproductive number, R_0. However, Dr. Risch should know that as of later summer and fall of 2021, the correct term to use was the time-varying effective reproductive number, R_t, as we had a population of people who were vulnerable, or vaccinated, or recently infected in addition to multiple other mitigations that were active in the U.S., including remote work, masking, and physical distancing. Neither of these metrics can be used to inform herd-immunity thresholds, only trajectories of outbreaks and epidemics. Dr. Risch then wrote, "While post-infection population herd immunity likely slowed the spread, neither it nor vaccine immunity were ever able to control the spread of the infection overall." He makes this statement despite the strong association with access to the vaccines in the winter and spring of 2021 and a decrease in COVID-19 in highly vaccinated populations. Going into the summer of 2021, many Americans did not have any immunity, and this provided a population at

much higher risk when the delta variant arose. If there was broader vaccine uptake, we would not have seen the same number of cases and certainly would not have seen the same number of hospitalizations or deaths that summer or fall. Please see citations in my expert report referring to the Commonwealth Fund data on lives and hospitalizations prevented due to COVID-19 vaccinations.

In the following paragraph, Dr. Risch attempts to make a case for infection-mediated immunity as a valid mechanism for preventing COVID infection. While I have multiple concerns about the data that he uses, the most important is that the citations he references involve populations prior to the delta variant. As has been shown clearly, this variant targeted unvaccinated people and drove excess hospitalizations and deaths.[7] In the next paragraph, he goes on to state that prior infection was sufficient, while neglecting the fact that a very large number of Americans had no immunity to COVID, either due to vaccination or infection. As I have covered the benefits of vaccination compared to being unvaccinated in my expert report, I will defer addressing here again. Dr. Risch then wrote "Documented fact of previous COVID-19 infection however was not included in the state vaccine mandate proclamation or in any reasoning therefrom about vaccinations as the only invoked

[7] *See* Bohnert AS, Kumbier K, Rowneki M, Gupta A, Bajema K, Hynes DM, Viglianti E, O'Hare AM, Osborne T, Boyko EJ, Young-Xu Y, Iwashyna TJ, Maciejewski M, Schildhouse R, Dimcheff D, Ioannou GN. Adverse outcomes of SARS-CoV-2 infection with delta and omicron variants in vaccinated versus unvaccinated US veterans: retrospective cohort study. BMJ. 2023 May 23;381:e074521. doi: 10.1136/bmj-2022-074521. PMID: 37220941; Puranik A, Lenehan PJ, Silvert E, Niesen MJM, Corchado-Garcia J, O'Horo JC, Virk A, Swift MD, Halamka J, Badley AD, Venkatakrishnan AJ, Soundararajan V. Comparison of two highly-effective mRNA vaccines for COVID-19 during periods of Alpha and Delta variant prevalence. medRxiv [Preprint]. 2021 Aug 21:2021.08.06.21261707. doi: 10.1101/2021.08.06.21261707. PMID: 34401884; PMCID: PMC8366801.

method to manage the pandemic." As I described above, protection due to prior infection is not easily tested for nor is the duration well understood. In October 2021, an employee may have been infected up to 19 months prior, and any immunity would have very likely waned significantly. A history of prior infection cannot be used as a valid alternative for proclamations like this one.

Throughout his report he suggests that all infections come with the same outcomes. For example, on page 4, he states that "it was clear by mid-2021 that almost everyone would get infected at some point." That unsupported statement does not consider the varying effect infection would have on different individuals.

Comments on Section "Breakthrough COVID-19 Infections as Vaccine Failure" (pages 5-10)

On page 5, Dr. Risch makes a surprising, and incorrect, statement given his stated expertise in epidemiology. In the first paragraph under the heading "Breakthrough COVID-19 Infections as Vaccine Failure", he states that because the initial mRNA vaccines reduced symptomatic infection by 94% to 95% that this meant that 5% to 6% of vaccinated people would subsequently get infected. This is a basic misinterpretation of the data. The correct interpretation of these data is that vaccinated people had a ~95% reduction in risk of symptomatic infection on a per person level. For example, in a population in which ~10% of a population got infected, it was probable that 5% of that number, or 0.5% of the vaccinated population, would have a symptomatic infection. He also states that it was incorrect for researchers to exclude

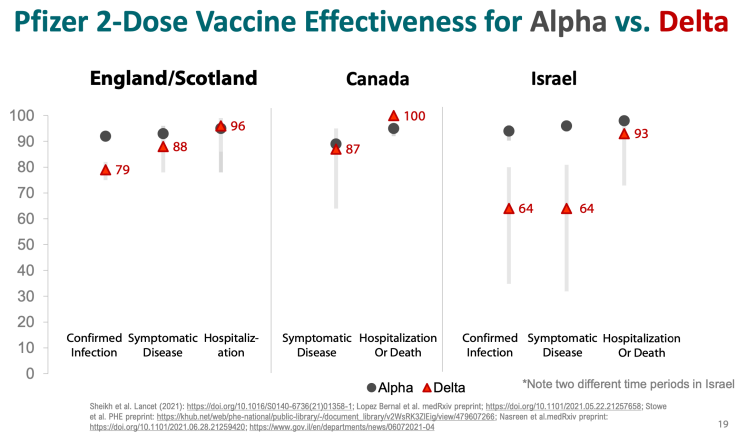
infections in the vaccine arms for the 7 to 21 days after vaccination. This assertion makes no sense as the immune response to vaccination takes at least 1-3 weeks to generate a protective effect. I think he is referring to a term commonly used in drug studies, “intention to treat”, which includes participants who may have not taken all medications as prescribed. That is not an appropriate metric to use for measuring vaccine effectiveness (VE).

In my expert report I explain, with extensive citations, the protective effects of the vaccines throughout the pandemic and so refer readers to that report for more detail.

In the first paragraph on page 6, Dr. Risch cites a paper that he uses to support that being vaccinated had “…lost most of their ability to reduce risk…”. This is incorrect. Here is a summary statement in the paper by the authors, “These results suggest that emerging SARS-CoV-2 variants of concern have increased transmissibility. Full vaccination was associated with reductions in susceptibility and infectiousness, but more so for Alpha than Delta and Omicron.”

In the paper by Jones et al. from 2022, cited at page 6, Dr. Risch also omitted the following conclusion by the authors: “During 2021, the infection-induced seroprevalence increased more in regions with low vaccination rates compared with those with high ones. The ability of SARS-CoV-2 variants to cause widespread transmission in the setting of high seroprevalence illustrates the value of COVID-19 vaccines, including recommended booster doses, to maximize protection.” Risch’s citation of this paper implied that mRNA vaccinations were failing to reduce infections, which is incorrect.

On page 7, Dr. Risch references slides from a CDC presentation by Dr. Meredith McMorrow from July 21, 2021 and implied that the primary vaccine series was no longer effective due the emergence of the delta variant. This is incorrect. An example of the data on vaccine effectiveness that was presented during that presentation is shown here[8]:



As can be seen, while there are decreases in vaccine effectiveness, protection remains substantial and essentially unchanged for prevention of hospitalization. These relative risk reductions are also far superior to the risk for unvaccinated people.

In the last paragraph of page 7, Dr. Risch highlights that vaccinated people were less infectious compared to unvaccinated people, which I agree with.

On page 8, Dr. Risch references breakthrough cases after healthcare workers who received the Oxford-AstraZeneca vaccine, which was never approved for use in the U.S. and uses a different vaccine technology so is irrelevant for this discussion.

[8] *See* https://context-cdn.washingtonpost.com/notes/prod/default/documents/8a726408-07bd-46bd-a945-3af0ae2f3c37/note/57c98604-3b54-44f0-8b44-b148d8f75165.

In the last paragraph of page 8, Dr. Risch refers to CDC data to imply that 4.3% of vaccinated people have breakthrough infections. First, his calculation is incorrect. To arrive at this percentage, he divided (total breakthrough infections in fully vaccinated + total breakthrough infections in partially vaccinated) by (total number of fully and partially vaccinated). For this calculation, including the partially vaccinated population in the numerator and the denominator is incorrect. Removing this population gives a cumulative, crude estimate of ~3.6%, not 4.3%. This is also a *cumulative* percent, not a rate. In August, September, and October of 2021, the breakthrough rate in fully vaccinated people was 0.5% or less each month.[9] These data strongly support the role of vaccination in preventing infections, and subsequent transmissions, in workplaces. Breakthrough rates are strongly dependent on many factors that varied throughout the pandemic, including case rates, variants, non-pharmaceutical interventions like required masking. A cumulative rate is not sensitive to these facts and so not a relevant data point for this discussion.

On page 9 of Dr. Risch's report he includes a table that shows infections rates between vaccinated and non-vaccinated individuals in 2021 and 2022. As is clear from the data, while vaccinated individuals can be infected, that number was much lower in vaccinated individuals than unvaccinated individuals, confirming superior protection among unvaccinated individuals when the Proclamation was in effect.

[9] *See* https://www.kff.org/policy-watch/covid-19-vaccine-breakthrough-cases-data-from-the-states/#:~:text=The%20rate%20of%20breakthrough%20cases,Connecticut%20to%200.54%25%20in%20Arkansas.

In the last paragraph of this section, there is a summary statement that uses non-scientific and non-medical terms like "appreciable risks" and "substantially imperfect" in reference to the available COVID vaccines. These are remarkably imprecise and highly subjective terms that do not address the fact that the data show that being vaccinated reduced a person's risk of infection, transmission, long COVID, hospitalization, and death compared to an unvaccinated person.

Comments on Section "COVID-19 Vaccine Effects in Virus Transmission: Secondary Attack Risks" (page 10)

On page 10, in the third paragraph in this section, Dr. Risch states that the transmission rate per infected person was not significantly different, despite stating the opposite earlier in his report. Not only do I disagree with this, but it is also an incomplete analysis as it does not consider the fact that *fewer* vaccinated people get infected compared to unvaccinated people, so the risk of transmission is markedly reduced overall in vaccinated people.

Dr. Risch shares data from a study by Madewell, et al in JAMA Network Open.[10] Again, these data were not available until 2022. The data that were available continued to demonstrate the superiority of COVID-19 vaccination. It is also critical to recall that transmission rates are directly related to infection rates, i.e. if a person is

[10] *See* Madewell ZJ, Yang Y, Longini IM Jr, Halloran ME, Dean NE. Household Secondary Attack Rates of SARS-CoV-2 by Variant and Vaccination Status: An Updated Systematic Review and Meta-analysis. JAMA Netw Open. 2022 Apr 1;5(4):e229317. doi: 10.1001/jamanetworkopen.2022.9317. PMID: 35482308; PMCID: PMC9051991.

not infected then their risk of transmission is zero. Vaccines markedly reduced infections and transmissions.

Comments on Section "General Comments About Covid Transmission Risks by Vaccinated and Unvaccinated Individuals" (pages 11-12)

On page 11, in the second paragraph, Dr. Risch wrote that 4.3% of 1,876 vaccinated WDFW employees would get infected, based on the CDC estimate he cited on page 8. As stated earlier, this is a *retrospective* estimate of the whole U.S. population, was not available to policymakers or experts at the time, includes many people living in congregate/higher risk settings like skilled nursing homes, and, most importantly, the calculation is wrong. Like infection rates, breakthrough case rates ranged throughout the pandemic depending on the variant and how many cases were occurring in different communities and this single estimate is not applicable in all populations. In populations with higher vaccination rates, there were fewer exposures and fewer breakthrough infections. The rate of breakthrough cases in vaccinated people was far lower than the infection rate among unvaccinated people at the time of the mandate.[11,12] Dr. Risch then attempts to make the case that even if all the

[11] *See* https://www.kff.org/policy-watch/covid-19-vaccine-breakthrough-cases-data-from-the-states/#:~:text=The%20rate%20of%20breakthrough%20cases,Connecticut%20to%200.54%25%20in%20Arkansas

[12] *See* Johnson AG, Amin AB, Ali AR, Hoots B, Cadwell BL, Arora S, Avoundjian T, Awofeso AO, Barnes J, Bayoumi NS, Busen K, Chang C, Cima M, Crockett M, Cronquist A, Davidson S, Davis E, Delgadillo J, Dorabawila V, Drenzek C, Eisenstein L, Fast HE, Gent A, Hand J, Hoefer D, Holtzman C, Jara A, Jones A, Kamal-Ahmed I, Kangas S, Kanishka F, Kaur R, Khan S, King J, Kirkendall S, Klioueva A, Kocharian A, Kwon FY, Logan J, Lyons BC, Lyons S, May A, McCormick D; MSHI; Mendoza E, Milroy L, O'Donnell A, Pike M, Pogosjans S, Saupe A, Sell J, Smith E, Sosin DM, Stanislawski E, Steele MK, Stephenson M, Stout A, Strand K, Tilakaratne

unvaccinated workers at WDFW were allowed to work, the absolute number would be less than the number of vaccinated workers with breakthrough infections. This is a specious argument. The absolute rate of infections is directly related to the number of people who are vaccinated and would have been far higher if less than 98% of workers were vaccinated. Given the risk of infection due to all the variants, and especially delta, the risk of infection was sufficiently high that the only potential accommodation was fully remote work, which was not possible for the plaintiffs. Using the data provided by Dr. Risch, around the time of the Proclamation, the breakthrough rate was approximately 0.5% per month, not 4.3%. This means that on average ~9 or fewer vaccinated WDFW workers would have a breakthrough infection per month. This means that theoretically, ~36 or fewer vaccinated WDFW workers would have had breakthrough infections total in August, September, October, and November combined, not 81. This number would have been dramatically higher if the organization did not achieve the high vaccine rates that they did. The risk of infection and transmission to co-workers and the public was markedly reduced in the vaccinated workers compared to the unvaccinated workers. This can be visualized on the graph presented on page 12, in which the grey histogram bars represent the number of infections in unvaccinated people in Washington State by week.

Also of note, the citation "Knopik, 2024" used to call doubt on the quality of the Washington State Department of Health's COVID-19 data collection is a non-peer

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BP, Turner K, Vest H, Warner S, Wiedeman C, Zaldivar A, Silk BJ, Scobie HM. COVID-19 Incidence and Death Rates Among Unvaccinated and Fully Vaccinated Adults with and Without Booster Doses During Periods of Delta and Omicron Variant Emergence - 25 U.S. Jurisdictions, April 4-December 25, 2021. MMWR Morb Mortal Wkly Rep. 2022 Jan 28;71(4):132-138. doi: 10.15585/mmwr.mm7104e2. PMID: 35085223; PMCID: PMC9351531.

reviewed and technically inaccurate document that is “published” on an anti-vaccine propaganda website. It is not the type of resource a reasonable medical professional or researcher in the field of epidemiology or public health would rely on.

In the last paragraph, Dr. Risch then posits that a given worker would more likely encounter a vaccinated person with a breakthrough infection compared to an unvaccinated person with an infection. As stated above, at any time, ~2.3 vaccinated workers might have a breakthrough infection, among nearly 1,900 people. Exposure is dependent on many factors and relies on data that I do not have access to. More importantly, the risk of having an infected unvaccinated person was much greater during this time (as can be seen the above reference chart). In addition, exposure and transmission is dependent on more than breakthrough rates. Many of those factors are challenging to uniformly adjust for across entire workplaces, such as physical distancing when working in proximity is the norm and would be allowed for vaccinated individuals. More importantly, how does one measure the risk to the people on that unvaccinated person’s team or in their office? Or who shares a breakroom or bathroom? Or a member of the public who interacts with them? Isn’t it reasonable that each of those workers can come to work knowing that it is as safe as possible?

Comments on Section “Potential Risk Burden Posed by Plaintiffs” (pages 12-13)

The only comment I can make here is that, as outlined in my expert report, accommodating unvaccinated workers was an undue hardship. The author again

references using prior infection as a replacement for vaccination status. I have outlined why this is incorrect in my expert statement. Further, it was not an acceptable substitute in the Governor's Proclamation. In addition, I will reiterate here, as described in my expert report, that antibody tests for COVID-19 have no therapeutic or medical benefit and should not be used by medical personnel. They are useful for evaluating if a person had a prior infection and was going to be, for example, part of a research project. We do not have thresholds for what is an "effective" or "protective" level of immunity using these tests or if they should be repeated to determine how fast or slow a person's antibody response decreases after infection.

Comments on Summary Sections (pages 13-14)

Dr. Risch's statement at page 14 that "infectivity of Covid-19 infections among unvaccinated people tends to last longer than among vaccinated people by a day or two, this tail end of the infectivity period occurs when people are almost always at home pending resolution of their symptoms or test-positivity quarantine, thus is of no consequence for infection burden in the workplace" does not appear to be based on any evidence. He does not consider people who are working while they are infected with COVID, including those individuals working at WDFW, or if a person works with an asymptomatic infection. Nor does he consider whether the plaintiffs could transmit the virus to someone who would then encounter one another person. Unvaccinated workers created a hazard in the workplace that could not be mitigated without undue hardship to the employer.

At the end of his report at page 14, Dr. Risch claims that "All of the evidence for the above was available in 2021, and Covid-19 booster doses were available starting September 2021." This is not correct. As discussed above, Dr. Risch's report relies on data long post-dating the case period here, and as late as 2024.

In addition to the specific information provided above, I cite to my report to rebut any inconsistencies between Dr. Risch's conclusions and mine.
